

MACOMBER LOOMS

THE KEY TO YOUR
WEAVING DESIGNS

DESIGNER'S
DELIGHT®

THE DOBBY WITH A
DIFFERENCE

Beech Ridge Road
York, ME 03909
207-363-2808

MACOMBER LOOMS

A microcomputer that controls the harness tie up and treadling sequence of your pattern. You can add it on to your standard Macomber loom in less than one hour with simple tools, or order as an accessory on your new Macomber loom giving you two looms for the price of one conventional dobby loom.

Conventional dobby looms lock the weaver into a preprogrammed pattern without allowing for correction or modification of the pattern during weaving.

The DESIGNER'S DELIGHT overcomes this limitation with three selection modes.

Design Mode-design, change, correct, and record the pattern as you weave it.

Automatic Mode-preprogram your pattern, step on the pedal, throw the shuttle and weave.

Manual Mode-when you just want to play or experiment and not record your pattern.

In addition your pattern may be displayed at any time on the L.E.D. display. The DESIGNER'S DELIGHT features single pedal operation, permanent storage of your tie up, and permanent storage of your treadling sequence on separate keys for future use. For example you may use the same tie up key but different treadling keys for many patterns.

This unique yet simple device allows us to offer up to 32 harnesses capacity in 24"-72" weaving widths with single pedal operation.

Get the best! Buy a MACOMBER LOOM.
Ask the weaver who owns one.

For further information call or write
MACOMBER LOOMS Beech Ridge Road York, ME 03909 207-363-2808

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Congratulations on your purchase of a Designer's Delight. We feel that it should give you years of weaving pleasure with a minimum of service.

We have compiled this owner's manual in order to give you proper instructions in the installation and operation of the Designer's Delight in conjunction with your loom. It is not intended as a lesson in weaving. However, if it is read carefully and you work through the examples given, you will soon be an expert in the operation of the Designer's Delight.

We will be pleased to answer any questions you have regarding the equipment. Please refer to the serial number of your loom and that of Designer's Delight when writing or calling us.

What To Do When Your Designer's Delight Arrives

Inspect the cartons for any damage. If any carton damage is present make note of it on the delivery form that you sign. This sometimes indicates that there has been damage to the contents in transit. Unpack each carton carefully and inspect for any damage. Save the cartons and packing material for any future return shipping. If you find that the contents have been damaged, notify the transportation company promptly. Also call or write us describing the damage. If possible, we will ship you replacement parts and an invoice covering the costs. This invoice should be presented with your claim to the transportation company.

Packing List

Each Designer's Delight should consist of:

- 1) One microcomputer with two #8 x 1½ flat head wood screws for securing, and six storage keys.
- 2) One power supply with two #8 x 1½ flat head wood screws for securing, and one spare fuse.
- 3) One master pedal assembly with the appropriate cables, and cable clips for connection to the power supply and microcomputer.
- 4) One special tie up hook for each harness on your loom, plus two spares in case you bend or break one. Example: 16 harness loom, 16 hooks plus 2 spares for a total of 18 hooks.
- 5) One gas cylinder with top adjustable mounting bracket, two #10 x 1" round head wood screws for securing, and connecting lower pin.
- 6) Two white universal magnets on adjustable mounting brackets, with 2-#6 x ½" round head screws for securing.
- 7) One pedal rod hardware kit consisting of two black u-shaped pedal rod retainers, four #10 x 1" round head wood screws, two 3/8" pedal rod collars, two 1 3/8" wood spacers, two wooden lower action piece braces, with two #10 x 1" round head wood screws and two #10 x 1½" round head wood screws, and one 5/16" diameter steel rod.

Tools Needed For Installation

1-Hammer
2-Screw drivers (1-small) (1-medium)
1-Drill (Hand or Electric)
1-.160 Drill Bit
1-~~.140~~ Drill Bit
1-Pair Needle-Nose Pliers
1-Pair regular or gas pliers
1 or 2-C-Clamps

Installation Instructions (Also see photographs)

- 1) Center the microcomputer directly in front of the shuttle box on the top of the loom. Drill two ~~.140~~ holes in the top front action piece using the holes in the microcomputer cabinet as a guide. Secure with two #8 x 1 $\frac{1}{4}$ " flat head wood screws provided.
- 2) Repeat the above procedure to attach the power supply directly in back of the microcomputer on the back top action piece.
- 3) Loosen the set screws on the pedal rod collars of your loom. With a hammer and the short 5/16" diameter steel rod provided, tap the pedal rod to the left or right. Remove all pedals and spacers. Now slide the master pedal unit in place on the pedal rod on one side only. Next put one 1 3/8" spacer, then the two 3/8 collars then the second 1 3/8" spacer provided on the pedal rod in the middle of the master pedal unit. Now slide the other side of the master pedal unit on the pedal rod, and center the whole unit in the middle of the loom. Re-Install the warp beam release pedal and all the pedals and spacers that you have room for. Remember to put the collars on the ends of the pedal rod. (Note: It is not necessary to re-install any of the regular tie-up pedals if you do not wish to use them.) After re-installing the pedals and spacers re-center the master pedal unit, using a ruler to measure side to side alignment. Secure the set screws on all collars.
- 4) Position the two lower action piece braces on the outsides of the master pedal unit. Drill two .160 holes through each and secure with the screws provided. Position the two u-shaped black metal pedal rod retainers over the 1 3/8" spacers inside the master pedal unit. Drill two .160 holes through each and secure with the screws provided.
- 5) Install the gas cylinder top mounting bracket to the front lower action piece by drilling two .160 holes through the bracket into the wood and secure with the screws provided. The bracket should go to the bottom of the action piece and be centered from left to right. Next attach the gas cylinder to the top bracket by tipping it up and slipping it into the bracket. Fasten it to the lower bracket on the master pedal unit by raising the master pedal up and inserting the pin provided. Make sure that you have the master pedal lock down clip on the lower portion of the gas cylinder slide rod.

This clip works the same as one on a screen door closer. It is used to hold the master pedal down when attaching or checking the pedal hooks, or when you want to hold a particular shed open continuously.

- 6) You are now ready to do the most important and some say most difficult installation step: Installing the special tie-up hooks. Just remember this is the only time you will have to crawl under the loom to do a tie-up. One hook goes on each odd lamm on the left. Example: Left side of master pedal looking from the front a hook would go on lamms 1, 3, 5, 7, 9, etc. Right side 2, 4, 6, 8, 10, etc. Lock the master pedal in its down position against the floor. This will allow you to see the lamms more clearly.
The circle on the bottom of each special hook goes to the rear of the loom. The long hook on the top of each special hook faces the front of the loom. Start by installing the back hook on either the left or right side. Example: On the left you would start with last odd lamm and continue forward putting a hook on each odd lamm until you reach #1 lamm. On the right you would start with the last even lamm and continue forward putting a hook on each even lamm until you reach #2 lamm. After installing a hook on each lamm slide the furthest one back on either the left or the right over and into the proper slot in the master pedal. Check the side to side alignment of the hook with the lamm and pedal slot. Once you have it straight up and down slide the retaining clamp up over the front part of the hook. It may be necessary to squeeze the hook together with a pair of needle-nose pliers to facilitate sliding the clamp on. When you are sure that the hook is straight up and down and that it slides freely in the master pedal slot, squeeze the clamp shut tightly with a regular pair of pliers. Continue the above procedure until all of the hooks are clamped on the lamms. When this task is completed unlock the master pedal and let it return to its top position. Note: Make sure that the lock goes all the way to the bottom of the rod.

Adjusting The Alignment of Hooks and Pedal

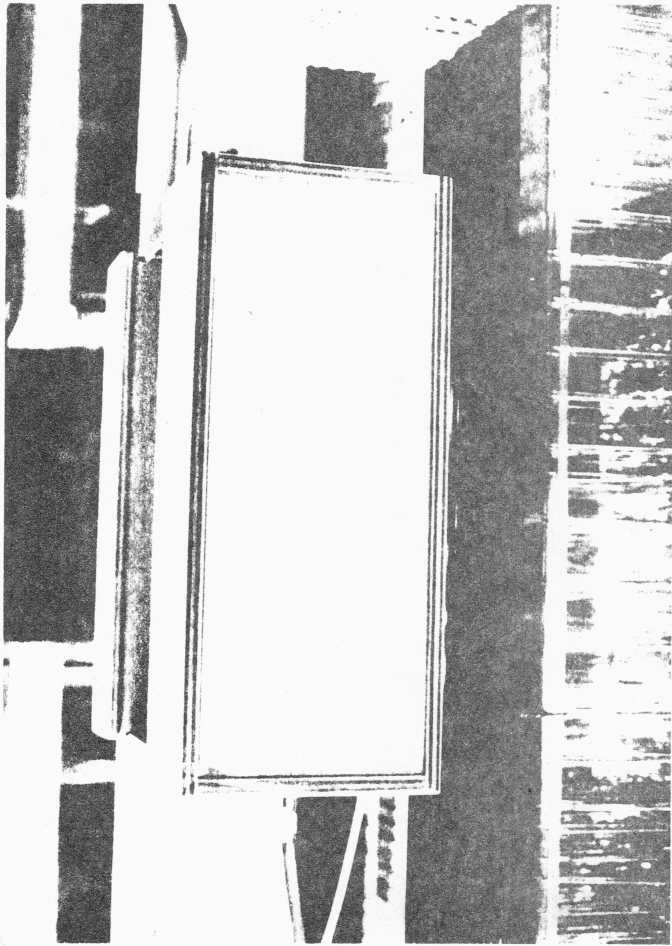
Starting with the back lamm, (this will be connected to the last hook on the right) manually depress each solenoid with your finger. If the solenoid pin does not depress fully, bend the hook forward or backward a little so that the pin goes through the center of the circle at the bottom of the hook. If the circle appears to be below or above the solenoid pin with master pedal fully up, move the gas cylinder top adjustable mounting bracket up or down, one or two notches until proper alignment is achieved. Once proper alignment is achieved manually depress each solenoid with your finger and depress the master pedal raising each individual harness. This will assure that proper alignment has been achieved.

- 7) Now that step #6 is complete it is time to go on to some easier tasks. Installation of the two white universal magnets. These control all the stepping output of the microcomputer and input of tie-up to the master pedal unit. With the master pedal in the up position clamp the magnet mounted on the short

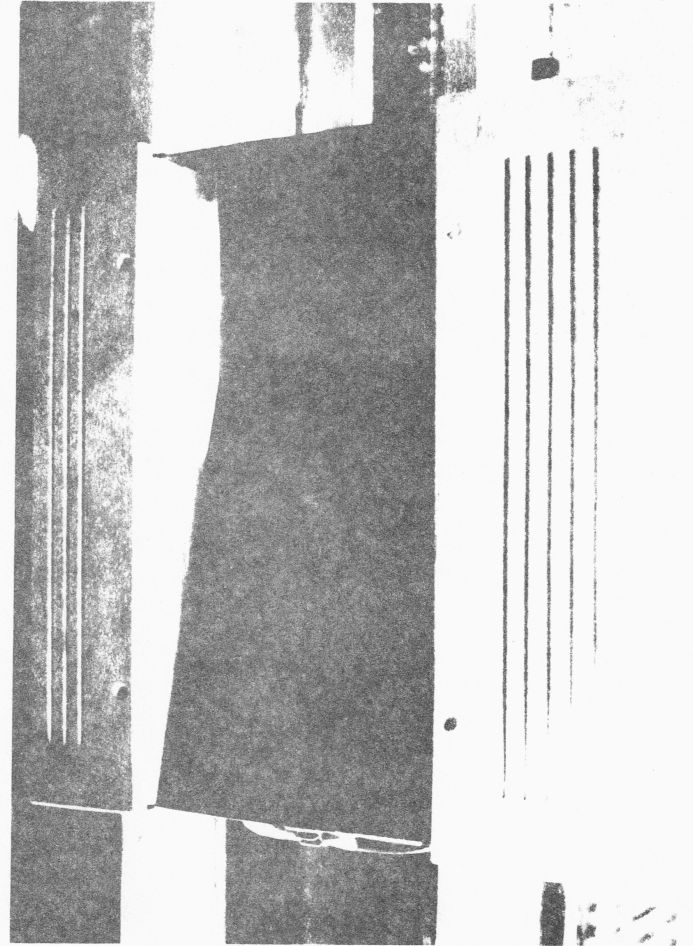
black bar to the front lower action piece of your loom. Position it directly in back of the switch on the right side of the master pedal. Now move the pedal up and down slowly listening for an audible click of the switch, when the magnet attracts it. Reposition it if necessary until you hear it click on and off. Once proper alignment is achieved drill a single .120 hole in the middle of the slot on the mounting bracket and secure with the #8 x 1/2 round head wood screw provided. Drilling the hole in the middle allows you to move the switch up or down if necessary. Depress the master pedal fully and repeat the above procedure to install the left switch.

- 8) You are almost ready to use your Designer's Delight. The final step involves plugging in the power cables and installing the cable clips. The short cable plugs into the back of the microcomputer on the right end, and into the back of the power supply box on the right end. The plug goes into the bottom right receptacle in the power supply box. One of the 3/8" cable clips should be stuck to the right side of the shuttle box to hold the cable up out of the way. The long cable goes between the power supply box and the master pedal. (Note: Looms with more than 16 harnesses use the cables between the power supply box and the master pedal.) In case of two cables, the first runs from the upper right receptacle of the power supply box to the front receptacle on the master pedal. The second runs from the bottom left receptacle of the power supply box to the back receptacle on the master pedal. Install the remaining 3/8" cable clips to secure the cable or cables along the bottom of the back top action piece to which the power supply box is secured. Then run the cable or cables down the back edge of the right center upright using clips to secure. When you reach the floor, simply run the cable across the back of the loom to the back of the master pedal. Use 1 or 2 clips to secure the cable to the back top center of the master pedal. The 110 V power supply cord can be braided around the other cord or cords and run down the back side of the center upright. Secure at the bottom with the one 1/4" cable clip. If you have a three wire extension cord, plug the power supply into it. If you do not, use a three wire to two wire adapter and plug into a regular extension cord.

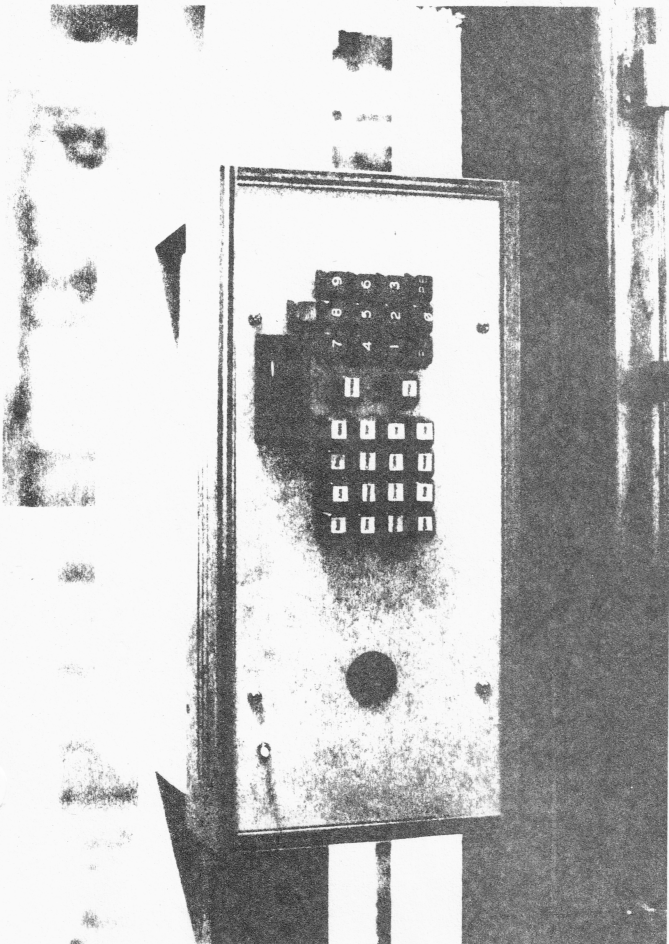
You are ready to try your Designer's Delight. The on/off switch for the power supply is located on the lower right back side of the power supply box, right next to the fuse. Switch up-power on switch down-power off. Upon power-on, check the red light located in the back of the power supply box next to the cable plugs, to make sure the power is on. Check the display on the front of the microcomputer to make sure power is going to it. The display should read 000. Next flip the solenoid power switch located on the upper left front panel of the microcomputer. Switch up-power on, switch down-power off. An audible click of the solenoids will be heard when power is turned on, or off. If the power is not present at one or any of the above locations, check the plugs to make sure they are correctly positioned and secure.



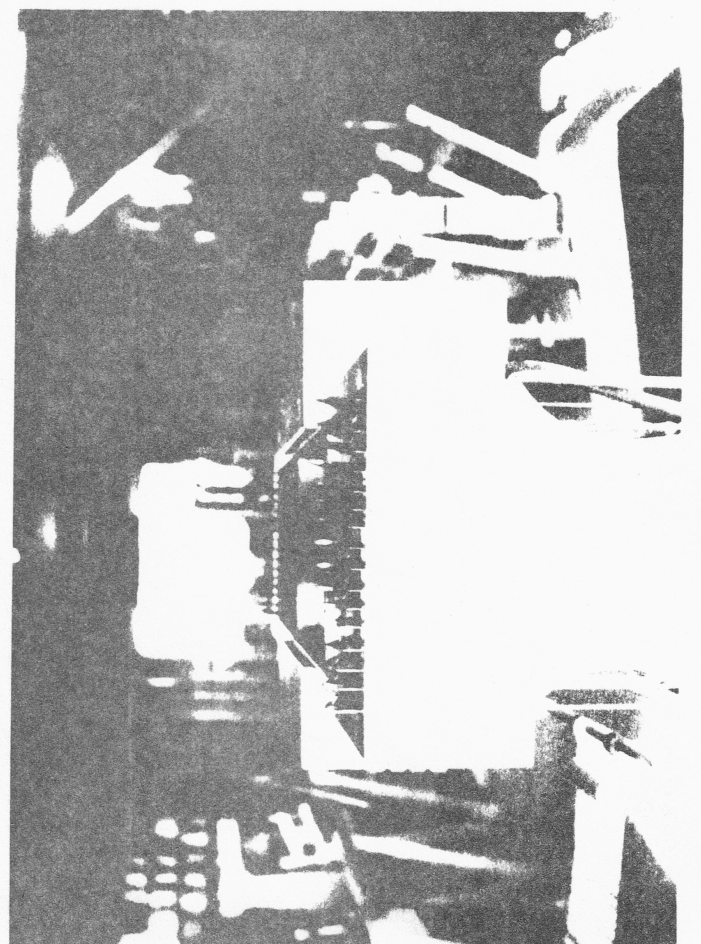
POWER SUPPLY



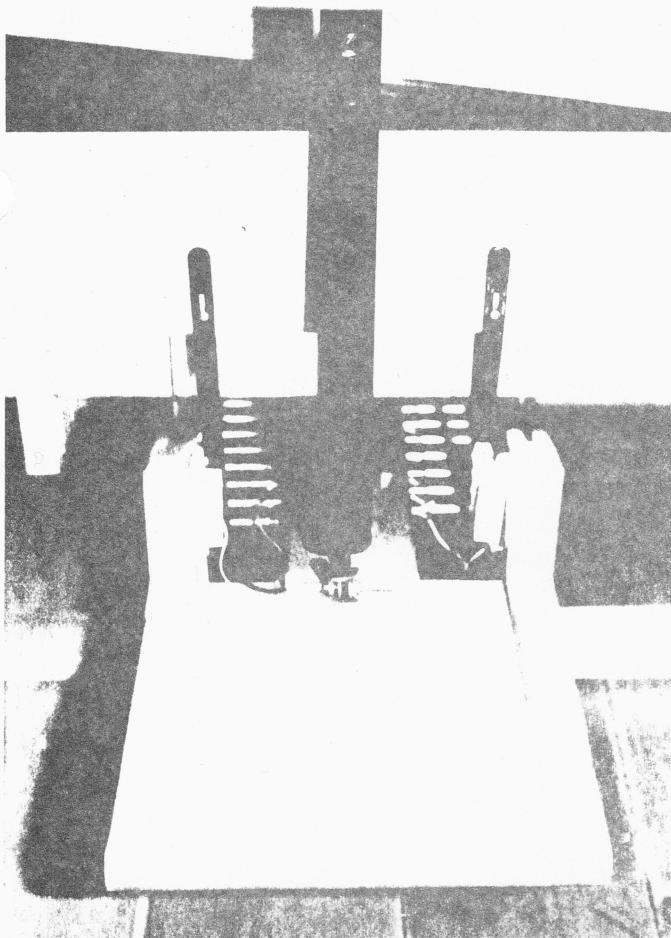
TOP VIEW



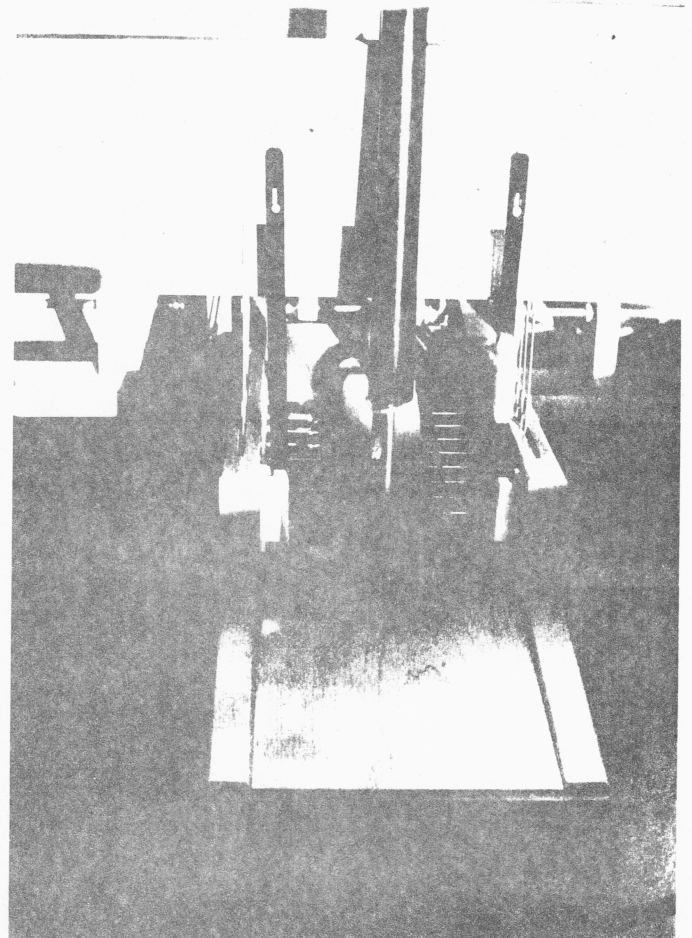
MICROCOMPUTER



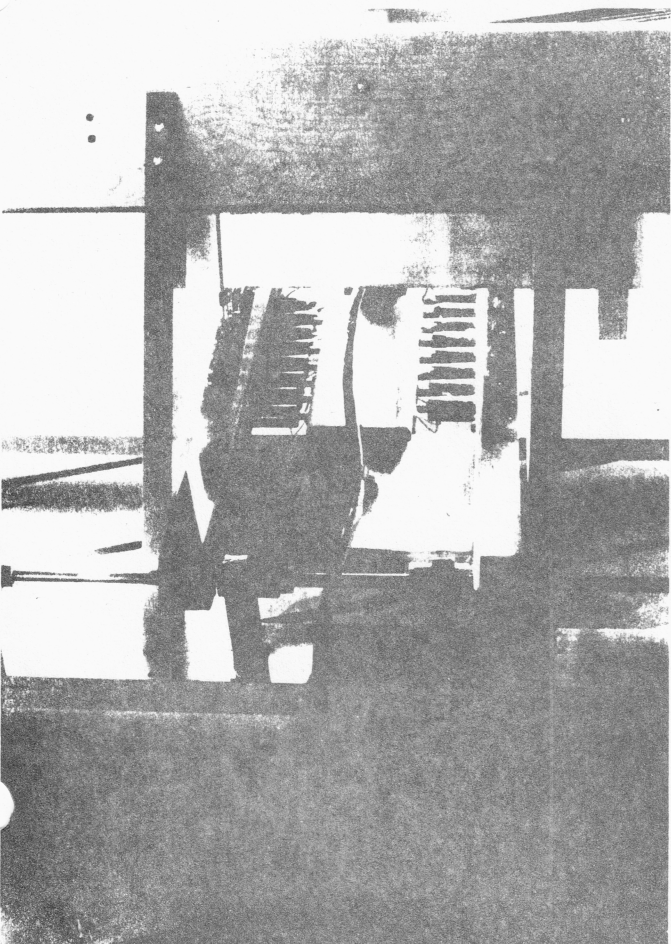
END VIEW



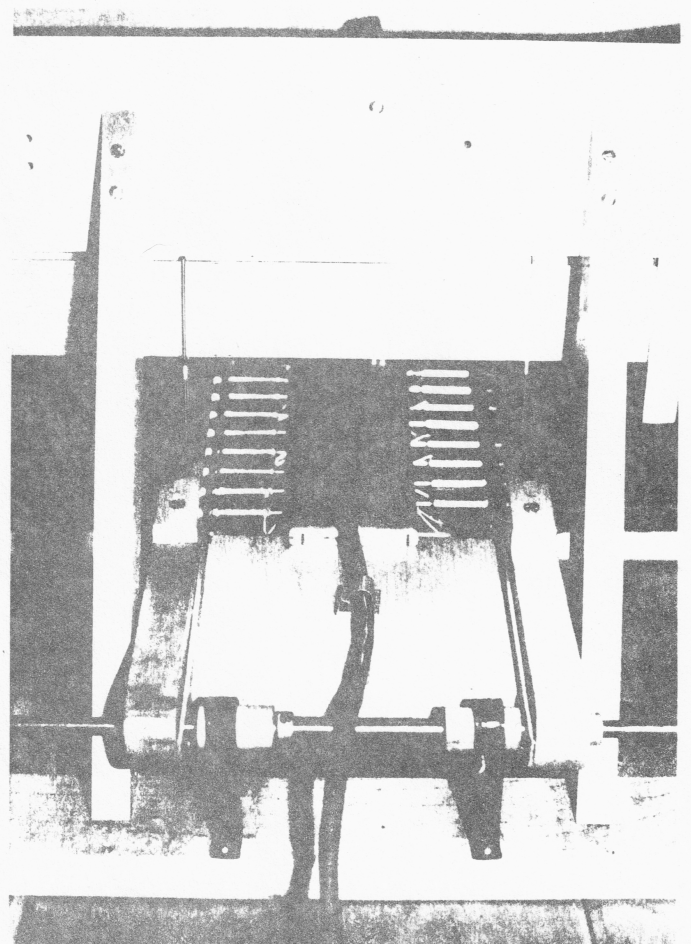
MASTER PEDAL TOP POSITION



MASTER PEDAL LOCKED DOWN



MASTER REDAL REAR VIEW



MASTER PEDAL SUPPORTS

RULES

We suggest that you please read all sections of this manual carefully before attempting to operate your DESIGNER'S DELIGHT. The following is a list of Things To Avoid Doing.

- 1) Never Ever set anything on top of either the power supply case or microcomputer case. Both pieces of equipment need to breathe. Avoid spilling or spraying anything on or into either case as you will likely damage the contents and void your warranty.
- 2) Do Not attempt to use your regular pedals and the Master Pedal at the same time. If you wish to use your regular pedals depress the Master Pedal and lock it down out of the way. This will avoid damaging the Master Pedal and special pedal hooks.
- 3) You Must always release the Master Pedal Lock fully allowing the pedal to return to the top of its stroke.
You Must always fully depress the Master Pedal to the floor and allow it to return to the top of its stroke. Avoid resting your feet on the Master Pedal.
If both of the above rules are not followed you will find that your special pedal hooks will not connect completely and you will drop some of the harnesses during weaving, particually in Automatic Modes.
- 4) Never Ever open either the power supply case or the microcomputer case. Doing so could result in an electrical shock to your body. If you have a problem or are just curious about what is inside, call us up.
- 5) Be Careful not to drop your DESIGNER'S DELIGHT or handle it roughly. Avoid operating the keys roughly. Avoid stomping on the Master Pedal.
- 6) Avoid using the system in extreme temperatures: (Below 32 degrees F. or 0 degrees C, or above 104 degrees F or 40 degrees C.) Also protect the unit from extremely dusty or humid conditions.
- 7) Never use volatile fluid such as Lacquer Thinner, Benzine, etc., when cleaning your DESIGNER'S DELIGHT.
- 8) Your DESIGNER'S DELIGHT contains precise electronic components. We suggest that you treat it as you would any expensive electronic equipment.

Miscellaneous Notes

- 1) The maximum Pedal Number allowed is 64, which includes P01-P62 and Peven and Podd.
- 2) The maximum Sequence Number allowed is 99.
- 3) The maximum Harness Number allowed is 32.
- 4) The maximum pedal configuration can be stored on three memory keys.
- 5) The bits required to store a normal (not a repeat Sequence) Sequence Line is: 8 times (The total number of Pedal Numbers on each Sequence Line) plus 2.
- 6) The bits required to store a sequence which repeats a previously known sequence is 32 bits.
- 7) The capacity of a memory key to store a sequence configuration depends on the total number of Pedal Numbers on each sequence line and the number of repeated sequences. It can be computed from the rule in 5) and 6).
- 8) A successful weaving step requires that the master pedal be pushed down to the bottom of its travel limit. If for some reason, the master pedal does not reach the bottom after the pedal is pressed for 2 seconds, an unsuccessful weaving step is detected and a beeping sound is made to alert the operator that the last weaving step must be repeated.
- 9) The solenoid switch located in the upper left corner of the front Panel provides the means to disable all the solenoids at any time. This switch can be used to step to a desired Pic in a sequence line without energizing the solenoids. Weaving at any Pic in a sequence line is possible by turning the switch back on again.

Keyboard Description

0-9: digits for entering pedal, harness, sequence, design, repeat count, or memory key number.

RESET: to reset pedal, sequence, or design configuration. to empty the memory before entering new information.

START: inputs pedal, sequence, or design configuration.

PEDAL: indicates the input or the operation of a pedal.

HARNESS: indicates the input or the operation of a harness.

SEQ: indicates the input or the operation of a sequence.

REPEAT: indicates either a repeat count after one sequence is entered or to repeat a known sequence number while starting a new sequence.

END: indicates the end of a pedal, sequence, or design configuration.

ENTER: to enter all information into the memory, and to display next entry in the memory.

PEVEN: selects all the even harnesses.

PODD: selects all the odd harnesses.

MANUAL: Manual mode selection.

AUTO: Automatic mode selection, either sequence or design.

CHANGE: modifies pedal configurations sequence configurations, or design configurations. Also enters color change sequences.

DISPLAY: displays pedal configuration, sequence configuration or design configuration.

READ: reads pedal design or sequence, configurations from a memory key.

STORE: stores pedal design or sequence configurations into a memory key or keys.

CLEAR: clears the current entry on the LED Display not the memory.

Note: any current entry in the LED Display (maximum 3 keys typed) is cleared.

DESIGN: design mode operations.

BACK: (Backstep): back one step in design mode operation.

DELETE: to delete a sequence line number, or a design number.

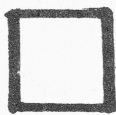
STATUS: to show the current sequence number or the repeat count, remaining of the current sequence.

Symbol Description (LED Display)

RESET



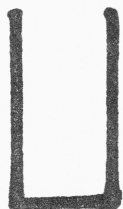
REPEAT



MANUAL



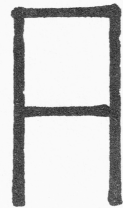
START



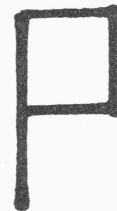
CHANGE



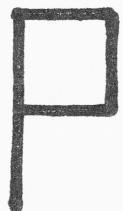
AUTO



PEVEN



DAL



DELETE



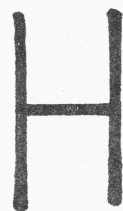
DESIGN



PODD



HARNESS



DISPLAY



READ



SEQ.



STATUS



STORE



Principles of Operation

The Designer's Delight automates part of the weaving process so that a better weaving product can be made much quicker and much easier.

Upon power up, the first thing to be done is to enter the pedal tie up. This can be accomplished either by reading a previously programmed key which contains the pedal tie up desired, or by typing the tie up in through the keyboard on the front panel. This process replaces crawling under the loom to manually connect pedal hooks. As you enter the pedal to harness tie ups they are individually displayed on the front panel. In addition you can correct, change, display, read, or store the pedal tie up at any time.

Pedal to Harness Tie Up Configuration

General Configuration Description: A pedal configuration can contain a maximum of 64 pedal numbers. Each pedal number (from P1-P62) can be configured or connected to any or all combinations of harnesses up to the capacity of the loom. The Peven and Podd are two special pedal numbers which are connected to all the even numbers of harnesses and all the odd numbers of harnesses respectively. The following is a general diagram for all the pedal numbers on a 32 harness capacity loom.

```
P01 : Hxx, Hxx,.....,Hxx
P02 : Hxx, Hxx,.....,Hxx
P03 : Hxx, Hxx,.....,Hxx
.
.
.
P60 : Hxx, Hxx,.....,Hxx
P61 : Hxx, Hxx,.....,Hxx
P62 : Hxx, Hxx,.....,Hxx
Peven : H02, H04, H06, H08, H10, H12, H14, H16, H18,
        H20, H22, H24, H26, H28, H30, H32
Podd  : H01, H03, H05, H07, H09, H11, H13, H15, H17,
        H19, H21, H23, H25, H27, H29, H31
```

How To Start A Pedal To Harness Tie Up Configuration

You start a pedal configuration as follows: First clear any previous pedal configuration out of the memory.

- 1) Press RESET
- 2) Press PEDAL
- 3) Press ENTER

The pedal memory is now cleared.

To tell the system to start a pedal configuration

- 1) Press START
- 2) Press PEDAL
- 3) Press ENTER

The system is now ready to accept your pedal to harness tie-up.

- 1) press PEDAL
- 2) press number desired (1-62)
- 3) press ENTER

To tell the system that this pedal number is to be connected to this or these harnesses

- 4) press HARNESS
- 5) press number desired (1-32)
- 6) press ENTER

Repeat steps 4-6 until all the harnesses you want connected to this particular pedal are entered.

Repeat steps 1-6 until all the pedals that you want to use are tied up to the proper harnesses.

When all the pedals you want to use are tied up;

press END

Example: To tie pedals 1 and 2 to harnesses 1-8 with 4 harnesses connected to each pedal you

press PEDAL #1, ENTER
press HARNESS #1, ENTER
press HARNESS #2, ENTER
press HARNESS #3, ENTER
press HARNESS #4, ENTER

Pedal #1 is now tied up to harnesses 1, 2, 3, 4.

To tie up Pedal #2 simply;

press PEDAL #2, ENTER
press HARNESS #5 ENTER
press HARNESS #6 ENTER
press HARNESS #7 ENTER
press HARNESS #8 ENTER
press END

Pedal #2 is now tied up to harnesses 5,6,7, 8.

If you want to continue tying up more pedals you would press the next pedal number desired instead of END.

Please do not let our simple examples stifle your creativity. Remember that you can tie up any one of 62 pattern pedals to any harness or combination of harnesses up to the frame capacity of your loom.

How To Change A Particular Pedal

To tell the system which pedal number to change

- 1) press CHANGE
- 2) press PEDAL
- 3) press number (1-62)
- 4) press ENTER

The pedal to harness tie up information on this particular pedal is now gone from the memory. However, all other pedals remain unchanged in the memory... To ENTER the new tie up information on this pedal:

- 5) press HARNESS
- 6) press number (1-32)
- 7) press ENTER

Repeat 5-7 until all the correct HARNESSES numbers are entered. When done, press END.

Example: To change Pedal #2 from being connected to harnesses 5, 6, 7, 8 press CHANGE PEDAL #2 ENTER

press HARNESS #9 ENTER
press HARNESS #10 ENTER
press HARNESS #11 ENTER
press HARNESS #12 ENTER
press END

Pedal #2 is now tied up to harnesses 9, 10, 11, 12.

How To Add Pedals To A Pattern

If you are working with a 10 pedal tie-up and you decide that you would like to add more simply:

- 1) press START
- 2) press PEDAL
- 3) press ENTER

This will not affect the existing 10 pedals in the memory unless you call up one of the existing pedal numbers 1 to 10 by accident. In this case if you were to write over pedal #2 the new information would be recorded over the old. In any event to add two more pedals to the list, #11 and #12:

- 4) press PEDAL
- 5) press number (1-62)
- 6) press ENTER
- 7) press HARNESS
- 8) press number (1-32)
- 9) press ENTER

Repeat 7-9 until all the new harness numbers are entered. Repeat 4-9 until all the new pedal and harness numbers are entered. When done press END.

Example: press START, PEDAL ENTER
press PEDAL #11, ENTER
press HARNESS (1-32) ENTER
press PEDAL #12 ENTER
press HARNESS (#1-32) ENTER
press END

At any time during the Keying In Process, if you press a key by accident you can clear the display by pressing the CLEAR key, providing you have not pressed ENTER. The information keyed does not enter the memory until the ENTER key is pressed.

Example: you pressed P1 or H1, but you intended to press P2 or H2. To clear simply

- 1) press CLEAR
- 2) press the correct pedal number or harness number
- 3) press ENTER
- 4) continue to enter the correct information

All prior information in the memory is not disturbed or cleared.

How To Display A Pedal To Harness Tie-Up Configuration

To tell the system to display a particular Pedal-To-Harness Tie-Up:

- 1) press DISPLAY
- 2) press PEDAL
- 3) press number (1-62)
- 4) press ENTER

The 1st harness number tied to this pedal number will be shown on the LED display area. To tell the system to show the next harness number on this same pedal simply:

- 5) press ENTER

The next harness number will be shown on the LED display. When the list of harnesses tied to this particular pedal is exhausted (000) will display on the LED.

To stop displaying at any time press END instead of ENTER.

Your tie-up may be displayed at any time during the weaving or tie-up process. Example: You have just tied up pedal #1 to harness 1,2,3,4 and you wish to check it. Simply press DISPLAY, PEDAL, #1, ENTER.

The Display would show (H01), ENTER (H02), ENTER (H03), ENTER (H04), ENTER (000).

Note: If you attempt to display a certain pedal number that you have not previously programmed the display will show the error code (E02) which means no data present. To proceed simply press END and repeat steps 1-4.

How To Store A Pedal To Harness Tie-Up Configuration

- 1) Insert a memory key into the Keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right
- 2) press STORE
- 3) press PEDAL
- 4) press number 1-3 (For Pedal Numbers 1-21 press #1, for Pedal Numbers 22-42 press #2 and for Pedal Numbers 43-62 press #3).
- 5) press ENTER

The reason for coding the keys 1,2,or 3 is that each key has a maximum holding capacity of 21 pedals with up to 32 harnesses on each pedal. Example: If you program a tie up on 40 pedals you would type the entire tie-up in at one time. However, if you choose to store or save this tie-up for future use you would store it on two keys.

Press STORE, PEDAL, #1, ENTER.

The microcomputer will automatically put pedals 1-21 on key #1.

You would then remove key #1 and insert key #2 .

Press STORE, PEDAL, #2, ENTER.

Pedals 22-40 will be stored on key #2.

You should then label the keys with a sticker or a tag 1,2, or 3 and also put the name of the pattern on each. The symbols (P1) will show on the Display Key while #1 is storing. When the storing process is complete (000) will show on the Display. The storing time varies with the complexity of the pattern, as the keys are erased, re-organized, and the new information entered every time you use a key. It makes no difference whether the key is blank or full this same process is followed. The average storing time is ten seconds. If any other symbol appears on the display other than (000) when storing is complete check the ERROR code page of this manual to determine the problem.

We suggest that you store your tie-up as soon as you have programmed it, especially if it is a fairly complicated and time consuming tie-up to enter via the keyboard. The reason for this is, that in the event of a power failure even a momentary one all information in the memory of the microcomputer is lost. However, if you have the information on a key or keys you can be back in business in seconds by reading the information off the key and into the microcomputer memory. If this is a tie-up you do not wish to save for future use, you have not wasted a key as you can always store over what is already on the key. As explained earlier the keys automatically erase before storing.

How To Read A Pedal To Harness Tie-Up Configuration

Before reading in a pedal to harness tie-up configuration you should reset the pedal memory, so that your new tie-up does not mix with an old tie-up:

- 1) press RESET
- 2) press PEDAL
- 3) press ENTER

You are now ready to read in a pedal memory key or keys.

- 1) Insert a previously programmed memory key into the keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right.
- 2) press READ
- 3) press PEDAL
- 4) press number 1-3 (For pedal numbers 1-21 press #1, for pedal numbers 22-42 press #2 and for pedal numbers 43-62 press #3)
- 5) press ENTER

The average time to read is about 4 seconds. You can read a key over and over again and the information is always still in the key. It only disappears if you store new information over it. The symbols (P1) will show on the LED display while key # 1 is reading. When the reading process is complete (000) will show on the display. Again, if any other symbol appears on the display when reading is complete, check the ERROR code page of this manual, to determine the problem.

Two points worth noting:

- 1) If you have a tie-up on 2 or 3 keys and you put key #2 or #3 in the keyceptacle but read it as key #1 the microcomputer will accept it as key #1. For instance Key #2 contains the tie-up information of pedals 22-42 however the microcomputer will load this information into pedal positions 1-21 because you told it that this information belongs there. This is fine if that is what you want to do because it allows you to vary or reverse the order of your tie-up thereby giving you tremendous flexibility. Just make sure you do not do it by accident.
- 2) When reading or storing make sure you hit the proper button for the function you desire. We suggest checking the display for the proper symbols before hitting the ENTER key. Again if you tell the microcomputer that you want to read when in fact you want to store and you are putting a new tie-up on a key the old information on the key will be read into the memory and combined with the new information, thus spoiling the new tie-up, that you intended to store.

When your pedal to harness tie-ups are completed you are ready to select the mode of operation desired and start weaving. They are MANUAL MODE, DESIGN MODE, and AUTOMATIC MODE. Each mode of operation is discussed in detail on the following pages.

MANUAL MODE

If you select MANUAL MODE, your loom can be operated as a conventional loom by first keying in the pedal number (PXX) required, pressing the enter key, and pressing down the master pedal. When this pic is complete, you can then enter another pedal number and repeat the same operation again and again.

How To Start The Manual Mode

- 1) press MANUAL
- 2) press ENTER
- 3) press PEDAL
- 4) press number 1-62
- 5) press ENTER

Step on the master pedal and the harnesses that are tied up to the pedal number you selected will raise. Repeat steps 3-5 as many times as desired. When finished press END.

Example: Harnesses #1,2,3,4 are tied-up to pedal #1. To raise harnesses 1,2,3,4 press MANUAL, ENTER, PEDAL #1, ENTER, step on the master pedal and weave.

Harnesses #5,6,7,8 are tied-up to pedal #2 to raise them press PEDAL #2 ENTER step on the master pedal and weave.

If you wish to weave just Tabby in Manual Mode:

- 1) press MANUAL
- 2) press ENTER
- 3) press PODD or PEVEN
- 4) press ENTER

Step and weave. Repeat steps 3-4 as many times as desired. When finished press END.

If you wish to weave a pic of Tabby between each pattern pic in Manual Mode:

- 1) press MANUAL
- 2) press ENTER
- 3) press PEDAL
- 4) press number 1-62
- 5) press ENTER Step and weave
- 6) press PODD or PEVEN
- 7) press ENTER Step and weave

Repeat steps 3-7 as many times as desired. When finished press END.

You will notice that the only difference between calling for Tabby or for a pattern pedal is that one step is eliminated. Instead of pressing PEDAL and then PODD or PEVEN you simply press PODD or PEVEN, ENTER. You can call for Tabby at any time. However if you press the PEDAL key and then try to press PODD or PEVEN, ENTER nothing will happen. To clear the display simply press the CLEAR key and then press PODD or PEVEN and ENTER, step on the master pedal and weave.

When weaving in the Manual Mode none of the weaving steps are recorded. Because of this feature you can select or shift to Manual Mode at any time, from any other mode of operation. It is a mode that is used primarily for experimentation of weaves or to take out a pic that is not desired in the Automatic design or Automatic sequence modes. The use of the Manual Mode for this purpose will be explained in detail in those respective sections.

Design Mode

This mode is provided for weaving designers to fully utilize their creativities. If the Design Mode is selected, the weaver can operate the loom in a similar manner to Manual Mode with the exception that every step performed will also be recorded in the memory of the system and can be used in the future. Under this mode, the weaver can press Backstep, press the master pedal, and unweave the last step. This step is also erased from the memory. The above operation can be repeated as many times as necessary. In addition the Design Mode allows the weaver to correct, modify, display, read, or store the design configuration.

How To Select The Design Mode

You select the Design Mode as follows: First clear any previous design out of the memory.

- 1) press RESET
- 2) press DESIGN
- 3) press ENTER

How To Enter A Design Configuration

- 1) press START
- 2) press DESIGN
- 3) press ENTER
- 4) press PEDAL
- 5) press number (1-62)
- 6) press ENTER
- 7) press the Master Pedal and weave

Repeat steps 4-7 as many times as desired up to 99 times. When all the Design numbers are entered press END. Each step of the pedal or pic is one Design number. Note: The microcomputer will not accept a new design number until the one entered has been recorded by depressing the master pedal fully and releasing fully. It is possible to enter the design numbers without actually weaving by shutting off the solenoid switch and just depressing the pedal each time. This way you do not have to raise the harnesses.

How To Correct A Mistake While Entering Design Numbers

- 1) press BACKSTEP
- 2) press the Master Pedal and unweave the last step.
The Design number previously entered is erased from the memory of the system.

The above operation can be repeated as many times as necessary. It functions very similar to the Backspace operation on a typewriter. After the correction or corrections are made, to continue, simply repeat steps 4-7 above.

Example: press START DESIGN ENTER

press PEDAL #1 ENTER (goes in the memory as) Design #1
Step and Weave

press PEDAL #2 ENTER (goes in the memory as) Design #2
Step and Weave

press PEDAL #4 ENTER (goes in the memory as) Design #3
Step and Weave

If you wove pedal #4 and you wanted pedal #3 press BACKSTEP.
Unweave the cloth and Design #3 containing pedal #4 is gone
from the memory.

To resume press PEDAL #3 ENTER (goes in the memory as) Design #3
Step and Weave

press PEDAL #4 ENTER (goes in the memory as) Design #4

press END (if this is the end)

After you have entered and woven a design one step at a time,
you can display the design from the memory, change individual
steps of the design, delete individual steps of the design, run
the design in Automatic Mode from any point in the design and
store or read the design.

How To Display A Design Configuration

1) press DISPLAY

2) press DESIGN

3) press number (1-99)

4) press ENTER

And the content of the design number selected is displayed. To
display the above example: press DISPLAY DESIGN #1 ENTER. The
display will read P01. To display Design #3 press DISPLAY
DESIGN #3 ENTER. The Display will read P03.

To display the next Design number, simply:

5) press ENTER

And the next Design number's pedal number is displayed. "000" is
displayed when the END of the design configuration is reached.

Example: DISPLAY DESIGN #1 ENTER = P01

#2 ENTER = P02

#3 ENTER = P03

#4 ENTER = P04

ENTER = 000

Note: If you attempt to display a design number that contains
no pedal number because you have not programmed it, the
error code (E02) will appear on the display. No data
present. To proceed press END and repeat steps 1-4.

How To Change The Content Of A Design Configuration

To tell the system which design number to change

- 1) press CHANGE
- 2) press DESIGN

Enter the Design number to change

- 3) press number (1-99)
- 4) press ENTER
- 5) press PEDAL

Enter the new pedal number for this design number

- 6) press number (1-62)
- 7) press ENTER

The new pedal number for this design number changed is now in the memory. All other design numbers remain unchanged.

Example: press CHANGE DESIGN #1 ENTER (contained Pedal #1)

press PEDAL #20 ENTER (now design #1 contains Pedal #20)

After making a change you can check it by displaying it, or the whole design.

To make further design number changes simply repeat steps 1-7.

How To Delete Design Numbers From A Design Configuration

To tell the system which design number to delete:

- 1) press DELETE
- 2) press DESIGN

Enter the design number to be deleted

- 3) press number (1-99)
- 4) press ENTER

The design number that you no longer wanted is now gone from the memory. All other design numbers remain in the memory, however the design numbers above the one you deleted move down one position in the memory.

Example: You have a design that contains ten design numbers and you wish to delete the fifth one. Press DELETE DESIGN #5 ENTER.

You now have design numbers 1,2,3,4-6,7,8,9,10.

The pedal content of the remaining design numbers is unchanged but they are positioned in the memory as design numbers 123456789.

If you were to delete design #5 a second time you would lose the content of the original design #6 and the memory would then contain 1234---789 in positions 12345678.

To delete more than one design number repeat steps 1-4 as many times as you desire. To check the content of your design configuration after deleting simply display the whole design.

Now that you have entered a design configuration, displayed it, changed it, deleted some of it, and displayed it once again for final approval, you are ready to execute it in Automatic Design Mode.

How To Execute A Design Configuration In Auto Design Mode

To tell the system to execute a design automatically:

- 1) press AUTO
- 2) press DESIGN

Enter the design number at which you wish to start, and the microcomputer will go from that point on.

- 3) press number (1-99)
- 4) press ENTER
- 5) press the master pedal and weave until all the steps are done.

In Auto Design Mode the microcomputer will keep track of the proper steps according to the design configuration entered in the memory. It will execute these steps one by one as you push down and release the master pedal until the entire list is exhausted. You can start wherever you like at design #1 or design #50. You can also end wherever you like by simply pressing END.

Example: press AUTO DESIGN 50 ENTER and the microcomputer will start at design #50. If you have 80 design numbers in the configuration it will execute designs 50-80.

After the last step is executed the display will show "000". If you attempt to start at a design number that is non-existent the error code E02 will appear on the display. To proceed press END and repeat steps 1-5.

How To Unweave A Particular Pic In Auto Design Mode

You can unweave a particular pic in two different ways. The first is:

- 1) press END
- 2) press AUTO
- 3) press DESIGN

Enter the design number containing the pedal number of the pic that you wish to remove.

Note: You can determine which pedal number corresponds to which design number by displaying the design from number 1 to the END.

- 4) press number (1-99)
- 5) press ENTER
- 6) press down the master pedal and remove the pic.

If you wish to reinsert this pic hold the shed open and reinsert it. If you wish to skip it and go to the next design number simply let the master pedal up and the microcomputer will go to the next design number.

The second is:

- 1) press END
- 2) press MANUAL
- 3) press PEDAL

Enter the pedal number of the pic that you wish to remove.

- 4) press number (1-62)
- 5) press ENTER
- 6) press down the master pedal and remove the pic.

To re-enter Auto Design Mode repeat AUTO steps 1-5. Again remember that you can resume at any point that you wish.

How To Store A Design Configuration

- 1) Insert a memory key into the keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right.
- 2) press STORE
- 3) press DESIGN
- 4) press ENTER

Note: Only one memory key is needed to store any particular design configuration, as designs can contain no more than 99 pics.

The symbols (sd) will show on the LED display while the memory key is storing. When the storing process is complete "000" will show on the display. Average storing time is ten seconds.

Again we suggest that you store your design as soon as you have completed it, just in case you experience a power failure. You should also label the key with a sticker or tag.

How To Read A Design Configuration

Before reading in a Design Configuration you should reset the design memory:

- press RESET
- press DESIGN
- press ENTER

You are now ready to read in a Design Configuration:

- 1) Insert a memory key containing a design configuration into the keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right.
- 2) press READ
- 3) press DESIGN
- 4) press ENTER

The symbols (rd) will show on the LED display while the memory key is reading. When the reading process is complete "000" will show on the display. Average reading time is four seconds.

After reading in a design configuration you would execute it in AUTO DESIGN MODE.

Automatic Mode

If you select the Automatic Mode, you need to enter the treadling sequence of the pattern either by reading a preprogrammed memory key (or keys), or by simply typing the sequence through the keyboard on the front panel.

Treadling Sequence Configuration Description

General Description: In Automatic Mode the treadling process is represented by a series of sequence lines within the sequence configuration. Each sequence line contains a list of pedal numbers and a repeat count for the entire line. The list of pedal numbers on a sequence line indicates the proper treadling to be carried out while weaving that line. When the whole list of pedal numbers on a sequence line is completed, the line will be repeated as many times as the repeat count indicates, before advancing to the next sequence line. Sequences can be entered as one continuous line with up to ninety-nine pedal numbers within the line or as lines 1 to 99 with up to ninety-nine pedal numbers within each line. In addition each sequence line can be repeated from 1 to 99 times. This gives you the capability of entering and weaving up to 9,801 pedal numbers, and up to 970,299 pics before you exhaust a total sequence configuration.

If all this seems confusing, try to think of a sequence configuration as a single page from your favorite book. This page has 99 lines going down the page. Each line has enough space for 99 words across the page. If you choose, you can read each line up to 99 times before going on to the next line. Such is the case when you write your own favorite weaving sequence configuration into the memory of your DESIGNER'S DELIGHT.

After the treadling sequence is entered, you press the Auto and Sequence Keys to enter Automatic Mode. In this mode, you simply press down the master pedal and weave. The microcomputer will keep track of the proper sheds according to the treadling sequence stored, and execute the sheds one by one until the entire list is exhausted.

At any time after the whole sequence is entered you can store the current sequence configuration in a memory key (or keys) for future use. Again we suggest doing this in case of a power failure.

In addition, you can correct, modify, delete, insert, and display sequence lines. Color or shuttle changes of the weft may also be entered as a change sequence line, to remind you where and when in your pattern to change colors.

How To Program A Sequence Configuration

You program a sequence configuration as follows: First clear any previous sequence configuration out of the memory:

- 1) press RESET
- 2) press SEQ.
- 3) press ENTER

The sequence memory is now clear.

To tell the system to start a sequence configuration:

- 1) press START
- 2) press SEQ.
- 3) press ENTER

To tell the system which sequence line number to program on:

- 4) press SEQ.
- 5) press number (1-99)
- 6) press ENTER

To tell the system which pedal numbers you wish to write on this sequence line:

- 7) press PEDAL or (PODD or PEVEN)
- 8) press number (1-62)
- 9) press ENTER

Repeat steps 7-9 until all the pedal numbers on this line are entered. (Remember that if you want Tabby on a line you just press PODD or PEVEN and not PEDAL & a number.)

When all the pedal numbers on this line are entered, set the repeat count for the number of times you would like the entire sequence line to repeat before proceeding to the next line. If you set the repeat count at 1 the system will operate on this line just once. Set it at 99 and it will run the line 99 times. If you should forget to set a repeat count the system will automatically set the repeat count at 1.

- 10) press REPEAT
- 11) press number (1-99)
- 12) press ENTER

To program additional sequence lines repeat steps 4-12.

When all the sequence lines that you wish to use (up to 99 lines) are programmed:

press END

Note: It is not necessary to program sequence lines one after the other in numerical order. We suggest that if you have the space, leave some blank lines in the memory. This way you can go back later and insert new lines to modify or vary your pattern. Example: Program on lines 1,5,10,15,20 instead of 1,2,3,4,5 or whatever you choose.

We further suggest that you keep your sequence lines as short as possible in length. You can do this by breaking your pattern down further and using a greater number of sequence lines. The reason for this is that when you operate your pattern in Automatic Sequence Mode it is much easier to go to a certain point in the pattern if the sequence lines are short. This will become obvious as you use your DESIGNER'S DELIGHT.

Example: To program the system to operate on four sequence lines, each containing four different pedal numbers and repeat counts:

```
press RESET, press SEQ., press ENTER
press START, press SEQ., press ENTER
press SEQ., press #1, press ENTER
press PEDAL, press #1, press ENTER
press PEDAL, press #2, press ENTER
press PEDAL, press #3, press ENTER
press PEDAL, press #4, press ENTER
press REPEAT, press #1, press ENTER
```

Sequence line #1 is now programmed to operate pedal numbers 1,2, 3, 4 in order one time.

To program sequence line #5:

```
press SEQ., press #5, press ENTER
press PEDAL, press #5, press ENTER
press PEDAL, press #6, press ENTER
press PEDAL, press #7, press ENTER
press PEDAL, press #8, press ENTER
press REPEAT, press #5 press ENTER
```

Sequence line #5 is now programmed to operate pedal numbers 5,6, 7, 8 in order five times.

To program sequence line #10:

```
press SEQ., press #10, press ENTER
press PEDAL, press #9, press ENTER
press PEDAL, press #10, press ENTER
press PEDAL, press #11, press ENTER
press PEDAL, press #12, press ENTER
press REPEAT, press #2, press ENTER
```

Sequence line #10 is now programmed to operate pedal numbers 9,10, 11, 12 in order two times.

To program sequence line #15:

```
press SEQ., press #15, press ENTER
press PEDAL, press #13, press ENTER
press PEDAL, press #14, press ENTER
press PEDAL, press #15, press ENTER
press PEDAL, press #16, press ENTER
press REPEAT, press #3, press ENTER
```

Sequence line #15 is now programmed to operate pedal numbers 13,14, 15, 16 in order three times. Since this is the end of our example press END.

Remember that our example is very simple and that your sequence configuration can be varied to any degree within the limits of 1 to 99.

A Time Saver

How To Enter Sequence Lines With Identical Pedal Numbers

When programming sequence lines, if the current sequence line that you are programming has an identical pedal number list, and the same, or a different repeat count, than an earlier one, the following operation can be done to save entering time.

To tell the system the current sequence line number to program:

- 1) press SEQ.
- 2) press number (1-99)
- 3) press ENTER

To tell the system to duplicate a previous sequence line number:

- 4) press REPEAT
- 5) press SEQ.
- 6) press number (1-99)
- 7) press ENTER

To tell the system the repeat count of the current sequence line:

- 8) press REPEAT
- 9) press number (1-99)
- 10) press ENTER

Example: In our previous example each sequence line had a different list of pedal numbers and different repeat counts. However if sequence line #15 contained the same pedal numbers as sequence line #1 we could save entering time by pro-ramming sequence line #15 as follows:

```
press SEQ., press #15, press ENTER
press REPEAT, press SEQ., press #1, press ENTER
press REPEAT. press #3, press ENTER
```

Sequence line #15 would now operate pedal numbers 1,2,3,4 the same as sequence line #1. However sequence line #1 would operate once and sequence line #15 would operate three times, because that is what we told the system to do. However, line #15 could repeat from 1 to 99 times.

When using this time saving step there is one rule that you must follow. If you encounter a later sequence line that has identical pedal numbers to lines #1 and #15 you must enter it as a repeat of sequence line #1 and not as a repeat of sequence line #15. You may find that many of your patterns have identical sequence lines with different repeat counts throughout them. This entering short cut may be used as many times as you like within the limits of 1 to 99 sequence lines. Just remember to select the first sequence line in the pattern that is duplicated later on, and use it as the repeater.

How To Program Color or Shuttle Changes of Your Weft

You can program color or shuttle changes by entering the contents of a particular sequence line as CHANGE rather than entering pedal numbers.

First select a sequence line as the "Changing" sequence:

- 1) press SEQ.
- 2) press number (1-99)
- 3) press ENTER

Then, enter CHANGE as the contents of the sequence:

- 4) press CHANGE
- 5) press ENTER

Remember, no repeat count is needed in this case. To program further sequence lines simply press SEQ., or END if you are through programming. You can program as many color or shuttle changes as you desire within the limits of 1 to 99 sequence lines.

Note: You cannot use the short cut step to enter repeating color change sequences.

Example: If you are entering a pattern that contains twenty sequence lines, with three color changes, the first color change at sequence line #5, the second at sequence line #10 and the third at sequence line #15, you must enter them as three separate sequence lines. You should not attempt to enter #10 or #15 as a repeat of #5.

You will note that when you are weaving in Automatic Mode, and you arrive at a color change sequence line, the system will beep and stop to remind you to change colors. The symbols (C--) or in the case of our example (C05) for the first color change, will appear on the display. This indicates that it is time to change color and that you are at sequence line #5. You would then change colors, press the ENTER key or any key and the system will resume operation on the next sequence line programmed.

When your sequence configuration is complete you will probably want to check it by displaying each line.

How To Display A Sequence Line

To tell the system to display a particular sequence line:

- 1) press DISPLAY
- 2) press SEQ.
- 3) press number (1-99)
- 4) press ENTER

The first pedal number on the sequence line entered will appear on the display.

To show the next pedal number on this line:

- 5) press ENTER

The next pedal number on this line will appear on the display.

When the end of the sequence is reached (□XX) will be displayed. (□XX) is the repeat count of the line displayed. If the repeat count of the line displayed is 5 then (□05) will display.

After the repeat count is displayed press ENTER and (000) will display indicating the close of this sequence line.

To display other sequence lines repeat steps (1-5) you can display any existing sequence line at any time.

If you display a sequence line that is non-existent the display will show the error code (E02) no data present. To continue press END and repeat steps 1-5.

To stop displaying at any time press END instead of ENTER.

You will notice that when you display a sequence line that is programmed as a repeat of a previous sequence line, the display will show the original sequence line Number and the new repeat count only. It will not show the pedal content of the repeat line. However, rest assured that the pedal content is the same as the original.

Example: Sequence line #15 is programmed as a repeat of sequence line #1 with a repeat count of three. The display would show line #15 as (S01) with a repeat (□03) of three.

You will also notice that when you display a change color sequence line it will display as (CCC) with no repeat count as color changes do not have repeat counts and cannot be repeats of each other.

After displaying your sequence lines you may want to modify, correct, insert, add, or delete some information.

How To Modify or Correct An Existing Sequence Line

To tell the system to change a particular sequence line:

- 1) press CHANGE
- 2) press SEQ.
- 3) press number (1-99)
- 4) press ENTER

All the pedal numbers and the repeat count of this particular sequence line are now gone from the memory.

To tell the system the new pedal numbers to enter on this line:

- 5) press PEDAL
- 6) press number (1-62)
- 7) press ENTER

Repeat steps 5-7 until all the pedal numbers on this line are entered.

When all the pedal numbers are entered, set the repeat count of this sequence line.

- 8) press REPEAT
- 9) press number (1-99)
- 10) press ENTER
- 11) Press END

Note: When modifying an existing sequence line, make sure to press END at the end of the repeat count. Do Not continue to modify other sequence lines. If you wish to modify or correct other sequence lines repeat steps 1-11.

How To Insert A Non-Existent Sequence Line

If you had room to leave blank lines in the memory as we suggested, you can now insert new information on these lines if you wish.

To tell the system what sequence line number to insert:

- 1) press CHANGE
- 2) press SEQ.
- 3) press number (1-99)
- 4) press ENTER

The system is now ready to accept the pedal numbers you wish to place on this inserted sequence line.

To tell the system which pedal numbers you want on this line:

- 5) press PEDAL
- 6) press number (1-62)
- 7) press ENTER

Repeat steps 5-7 until all the pedal numbers on this line are entered.

When all the pedal numbers are entered, set the repeat count:

- 8) press REPEAT
- 9) press number (1-99)
- 10) press ENTER
- 11) press END

The above operation is similar to the modifying operation except that the sequence line to be inserted is not an existing one.

As in the case of modifying make sure to press END at the end of the repeat count. Do Not continue to insert other sequence lines. If you wish to insert other sequence lines repeat steps 1-11.

How To Add Sequence Lines To The End Of A Sequence Configuration

You may find that you wish a sequence configuration contained 30 or 40 lines instead of 20. If this is the case, you can add more lines to the end of the configuration by doing the following:

To tell the system which sequence lines to add:

- 1) press CHANGE
- 2) press SEQ.
- 3) press number (1-99)
- 4) press ENTER

Remember the sequence line number must be higher than all previous lines programmed.

The system is now ready to accept the pedal numbers you wish to place on this added sequence line.

To tell the system which pedal numbers you want on this line:

- 5) press PEDAL
- 6) press number (1-62)
- 7) press ENTER

Repeat steps 5-7 until all the pedal numbers on this line are entered.

When all the pedal numbers are entered, set the repeat count:

- 8) press REPEAT
- 9) press number (1-99)
- 10) press ENTER

You will note that the above operation is exactly like modifying and inserting with the exception that you are adding to the end of a configuration rather than going inside it. Because of this difference you will be programming a new END to the total configuration. Therefore you will press END only when you have completed adding all the new lines that you wish to include.

To continue adding sequence lines repeat steps 1-10. You can program up to 99 lines.

When done press END.

The above operation can be repeated as many times as necessary within the limit of 99 sequence lines.

How To Delete A Sequence Line

To tell the system which sequence line to delete:

- 1) press DELETE
- 2) press SEQ.
- 3) press number (1-99) The number of the line you wish to delete.
- 4) press ENTER

The sequence line that you have selected is now gone from the memory. All other lines remain undisturbed.

If you attempt to display or start at a deleted sequence line in Automatic Mode, the error code (E02) will be displayed.

However, when operating in Automatic Mode any deleted or blank lines will be skipped automatically.

Note: When modifying, correcting, or deleting sequence lines, if you select a line that is the primary repeater line for several other sequence lines, all the repeat lines will be modified exactly like the primary line.

Example: Sequence lines #5 and #15 are repeats of sequence line #1. Whatever you do to sequence line #1, you also do to lines #5 and #15. However, you can modify line #5 or #15 without effecting #1 or each other.

How To Store A Sequence Configuration In The Memory Keys

When all modifications to your total sequence configuration are complete, we suggest that you store it immediately, thus avoiding loss of the pattern in the event of a power failure. You can use up to 9 keys to store a whole sequence configuration.

How To Determine The Total Number Of Memory Keys Needed To Store A Whole Sequence Configuration

- 1) press STORE
- 2) press SEQ.
- 3) press ENTER

And the total number of memory keys needed to store the whole sequence configuration will be displayed on the LED. Use the total number of keys displayed to store the pattern. Start with number 1 key and store in order.

- 1) Insert a key in the keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right.
- 2) press STORE
- 3) press SEQ.
- 4) press number (1-9)
- 5) press ENTER

When the first key has finished storing the display will show (000). Repeat steps 1-5 for the total number of keys needed. Label each key as you store it.

Even though you have stored your sequence configuration, the information is still in the memory of the computer. It only disappears if you reset the sequence memory or lose power. We point this out so that you will know that you do not have to read it back in the memory to begin Automatic Sequence Mode.

How To Read A Sequence Configuration From A Memory Key

- 1) Insert a previously programmed memory key in the keyceptacle on the keyboard panel and turn it $\frac{1}{4}$ turn to the right.
- 2) press READ
- 3) press SEQ.
- 4) press number (1-9)
- 5) press ENTER

When the first key has finished reading the display will show (000). Repeat steps 1-5 if the whole sequence configuration is stored in more than one memory key.

After reading in the first key you can determine the total number of keys in the sequence configuration by:

- 1) press READ
- 2) press SEQ.
- 3) press ENTER

And the total number of memory keys required to compose the whole sequence configuration is displayed.

You can read the keys into the memory in any order. The micro-computer will automatically put the information in its proper order.

Example: If you have a total sequence configuration that contains 42 sequence lines, and is stored on three separate keys, you can read in any one of the three keys first, #1, #2, or #3. However, you must read all three keys in. If you do not the system will not operate on the sequence lines contained in the missing key or keys.

How To Execute A Sequence Configuration In Automatic Mode

As explained earlier, if you select the AUTOMATIC MODE, you need to enter the treadling sequence of the pattern either by reading, a preprogrammed memory key (or keys) or by simply typing in the sequence through the keyboard.

When this task is accomplished you can execute the treadling sequence automatically one step at a time.

To tell the system to execute a particular sequence line:

- 1) press AUTO
- 2) press SEQ.
- 3) press number (1-99)
- 4) press ENTER

Step on the master pedal and weave.

When you want to stop press END.

The execution starts at the sequence line specified, and you can continue weaving until the end of the whole sequence configuration is reached. Remember that you can start or end at any sequence line you desire. This enables you to vary your treadling considerably.

Example: If you have a total sequence configuration that calls for 40 steps of the pedal you might program it on sequence lines.

SEQ #1 1-10
SEQ #2 11-20
SEQ #3 21-30
SEQ #4 31-40

In this example the pattern is split into four parts. You could weave the four parts in any order you wish by simply starting and ending at different sequence lines.

To go backwards you would weave SEQ #4 and END. Then weave SEQ #3 and END. Then weave SEQ #2 and END. Then weave SEQ #1 and END.

However, it is important to know where you are so that when you finish a sequence line you stop at that point if you wish to. If you do not stop, the system will go on to the next sequence line unless you are at the end of the total configuration.

In the example of going backwards if you do not stop the system at the end of SEQ #3 it will continue on to SEQ. #4. You would end up weaving SEQ. #4, SEQ. #3, SEQ. #4 instead of SEQ. #4, SEQ. #3, SEQ. #2, SEQ. #1.

It is fairly easy to determine where you are. Each time you step on the pedal and weave the pedal number of the particular sequence line that you are on is displayed.

At any time if you wish to know what sequence line you are operating on:

- 1) press STATUS
- 2) press SEQ.
- 3) press ENTER

And the current sequence line number will display.

If you would also like to know the current repeat count of this particular sequence line:

- 1) press STATUS
- 2) press REPEAT
- 3) press ENTER

The current repeat count left is displayed. To continue weaving simply press down the master pedal and weave. Your weaving will continue from the point at which you called for status of either sequence line or repeat count remaining.

Status of either sequence line or repeat count may be called for at any time and in reverse order or individually. It is not necessary to call for the status of color change sequences as they display automatically when you arrive at one.

Remember that when you do arrive at a color sequence change the system will beep and stop. Change color and press the ENTER key or any key to proceed.

If you plan on weaving a pattern forward and backward you would be wise to program it that way. You could do this at any time by adding four more sequences to our earlier example.

Example: SEQ. #1 1-10
SEQ. #2 11-20
SEQ. #3 21-30
SEQ. #4 31-40
SEQ. #5 39-30
SEQ. #6 29-20
SEQ. #7 19-10
SEQ. #8 9-1

Remember that any of the editing procedures discussed in the sequence programming section may be carried out at any time during the weaving process.

Another easy way to determine the end of any given sequence line is to simply program a color change sequence line between pattern sequence lines. This way the system will automatically stop at the end of each sequence line even though you may not intend to change colors.

How To Unweave A Particular Pic In Auto Sequence Mode

There will be times when you run out of weft part way through a pic and wish to remove it. At other times you may not care for the appearance of a particular pic and wish to remove it. This can be done in the following manner:

- 1) Make note of the pedal number that you are weaving
- 2) press STATUS
- 3) press SEQ.
- 4) press ENTER

And make note of the sequence line on which you are operating:

- 5) press STATUS
- 6) press REPEAT
- 7) press ENTER

Now make note of the repeat count left.

You need the pedal number so that you can remove the right pic. You need the sequence line number and the repeat count so that you know where to begin after the pic is removed.

After ascertaining this information:

- 1) press END
- 2) press MANUAL
- 3) press PEDAL

Enter the pedal number of the pic that you wish to remove.

- 4) press number (1-62)
- 5) press ENTER
- 6) press down the master pedal and remove the pic.

If you wish to remove pics and you know their pedal numbers repeat steps 3-6. If you are done press END.

To resume AUTO SEQUENCE MODE at the point at which you stopped:

- 1) press AUTO
- 2) press SEQ.

Enter the sequence line number at which you stopped.

- 3) press number (1-99)
- 4) press ENTER
- 5) shut off the solenoid switch (located on the upper left hand side of the keyboard panel) and step through the pattern without having to raise the harnesses, until you arrive at the right pedal number to reinsert the removed pic.

You can determine that you are on the right sequence line and have the right repeat count left by re-checking status of either, at any point in the stepping process.

Reinsert the removed pic if you wish, and continue weaving. The execution of your sequence configuration will continue in the proper order.

If you discover that it is necessary to remove a particular pic, before you close the shed, you can of course do this immediately without going through the above procedure.

If you wish to hold a particular shed open for an extended period of time you can reach down and lock the master pedal down with the lock on the gas cylinder rod. This works just like the lock on a screen door closer. In addition you should shut off the solenoid power switch. The shed will remain open and your solenoids will last longer.

When you wish to continue, turn the solenoid switch on and release the pedal lock fully. Make sure that the lock is fully released, otherwise the master pedal will not rise to the very top of its stroke and may not connect your sheds properly.

The system will automatically continue from the point at which you paused.

Shutting off power to the solenoids also allows you to step through to particular pedal numbers within sequence lines without having to raise the harnesses. This allows you to vary your treadling even further. It means that you can go to any pic in your pattern and start from that pic or remove that pic.

If you leave your loom for longer than five minutes when in AUTO SEQUENCE MODE the solenoids will automatically shut themselves off. This is a built in feature to extend the life of the solenoids. When you return press ENTER or any key on the keyboard and the solenoids will re-energize. The system will start at the point at which you left off in Auto Sequence Mode. You simply step on the pedal and resume weaving.

If your trip away from the loom is planned we suggest that you shut the solenoid switch off. It is not necessary to interrupt the Auto Sequence Mode. When you return simply turn the solenoid switch back on and continue weaving. You can leave the system in AUTO DESIGN MODE for extended periods of time even over night if you wish, as long as you shut off the solenoids.

The entire system uses only 5 watts of power when at rest. This is the equivalent of 1/20th of a 100 watt light bulb. In other words you could leave your DESIGNER'S DELIGHT on at rest for 20 days straight before you would consume the same amount of energy that a 100 watt light bulb consumes in 1 day.

Error Codes or Messages

(E01) No Key Present

You have not inserted a key in the keyceptacle when attempting to read or store.

(E02) No Data Present

You have not programmed any information into the area of the memory that you have selected.

(E03) Key Removed To Soon

You removed the key while the system was reading or storing.

(E04) Key Capacity Has Been Altered. (Not a clean key.)

If you encounter a momentary power failure while storing a pattern it may damage the storing structure of a key. If this happens return the key to us for replacement.

(E05) Key Is Not Making Contact In The Keyceptacle

You have not turned the key $\frac{1}{4}$ turn in the keyceptacle. Try again. If the key refuses to contact after several tries return it to us for replacement.

(E06) Invalid Key For The Operation Requested

You tried to read a pedal key as a design or sequence key or vice-versa. Try again. You will note that we supply keys in two different colors. We suggest that you choose one color for pedal configurations and one for design or sequence configurations. This should help to eliminate the above problem. Proper labeling also helps.

(E07) Key Has Bad Organization

Try the key again. If it fails to operate properly return it to us for replacement.

(E08) Random Errors

This code indicates that there is an organization problem in the electronic interface that transfers all information between the keys and you DESIGNER'S DELIGHT. If you encounter this code, shut the system off and then on and try reading or storing again. If the system still fails to operate properly, call us.

Diagnostic Testing.

If you detect or suspect a problem with the master pedal or microcomputer portion of your Designer's Delight you should activate the diagnostic test mode to determine the specific problem area. There are five tests which must be performed in order.

NOTE: When the diagnostic test mode is activated any information that you have programmed into the various memories will be erased.

To activate the diagnostic test mode press the test key located in the back of the microcomputer case. The switch is recessed and is just to the left of the cable part, looking from the front of your loom.

When you press the key the system will automatically go into the diagnostic mode. Once it is in the diagnostic mode, the following rules should be noted:

(A) Each test will be performed continuously at the same level until the test key is pressed again.

(B) The test sequence will advance to the next level if the test key is pressed again regardless of the condition of the current level test.

(C) When the symbol (**3**) is displayed on the far left LED, it indicates that the system is in diagnostic mode. The number displayed on the far right LED indicates the level that is being tested. The symbol (**E**) will be displayed on the middle LED if a error is detected.

Level of Testing

Level 1-EPROM TEST

The EPROM is the intelligent program of the system. A two byte check sum is always located at the end of the program space. The contents of the EPROM are added together and checked against this known value. If an error is detected the LED will display the symbols (**3E1**). If all is well the LED will display the symbols (**3 1**). The display on this test is instantaneous.

Level 2-RAM TEST

A known value is written into every location of the random access memory. Each one is read out and compared with the known value. If an error is found, the LED will display the symbols (**3ER**). If all is well the LED will display the symbols (**3 1**). The read out on this test takes approximately six seconds.

Level 3-LED TEST

All 3 LED'S will blink with the numbers (888). The blinking period is approximately two seconds.

Diagnostic Testing continued.

Level 4-SOLENOID TEST

Each solenoid is energized one at a time in sequential order. You have to visually sight each solenoid on the master pedal to determine that it is energizing. The energized time is approximately two seconds. The system is programmed to energize a maximum of 32 solenoids. If your master pedal has fewer than 32 solenoids the system will energize all the solenoids that you have one at a time and then return approximately fifteen seconds later to energize them again.

Level 5-KEYBOARD TEST

Each key on the keyboard has a display number assigned to it. When you press a particular key the assigned number should display on the LED.

LEDS DISPLAY	KEY PRESSED
000-----	0
001-----	1
002-----	2
003-----	3
004-----	4
005-----	5
006-----	6
007-----	7
008-----	8
009-----	9
010-----	AUTO
011-----	START
012-----	READ
013-----	STORE
014-----	RESET
015-----	DISPLAY
016-----	CHANGE
017-----	ELFTE
018-----	MANUAL
019-----	PEDAL
020-----	DESIGN
021-----	SEQUENCE
022-----	BACK
023-----	END
024-----	HARNESS
025-----	Peven
026-----	Podd
027-----	REPEAT
028-----	ENTER
029-----	CLEAR
030-----	STATUS

Diagnostic Testing Continued:

When you finish test level 5 press the test key again and the system will exit the diagnostic mode.

If you diagnose a problem at any of the test levels make a note of it and call our office Monday-Friday 8:00 AM to 4:00 PM Eastern Standard Time. Telephone number 207-363-2808.

When you call, if someone qualified to answer your problem is not available your call will be returned within twenty-four hours.

NOTE: If a problem is detected in test level 4 with one of more solenoids, check to make sure that your pedal hooks are in proper alignment with the solenoid pins in the pedal slots. To properly align or realign the hooks, refer to page 3 of your installation manual.

Warranty Information

Your DESIGNER'S DELIGHT is guaranteed to be free of any defects in materials or workmanship for a period of ninety days from the date of delivery. This warranty covers both hardware and software of the microcomputer, the power supply, and the master pedal assembly.

If you should have a problem within the warranty period we will repair or replace at our option any part at no charge. We will also pay round trip transportation and insurance charges via UPS.

At the end of the warranty period repair charges are as follows:

Flat Fee Schedule:

Repair or replace the microcomputer \$100.00

Repair or replace the power supply \$ 50.00, \$60.00, or \$100.00 depending on loom frame size.

Repair or replace the master pedal \$ 25.00 per solenoid
(Example: 1 solenoid malfunctioning \$ 25.00, 2-\$50.00)

Note: Solenoids are easily replaced by the customer if necessary.

Round trip transportation and insurance charges via UPS to be paid by the customer.

The built in diagnostics allow you to identify the area of any malfunction, thus having to return only that portion of the total system for repair. In all cases repairs can be made in 30 days or less.

Repair prices subject to change without notice.

Repaired parts are guaranteed for an additional ninety days.